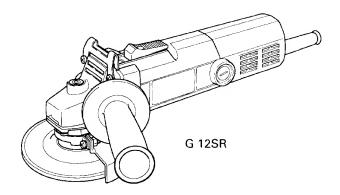
# HITACHI

MODEL MODELO MODELO

**G 10SR • G 12SR** 

DISC GRINDER MEULEUSE AMOLADORA ANGULAR



# **INSTRUCTION MANUAL AND SAFETY INSTRUCTIONS**

# **⚠ WARNING**

Improper and unsafe use of this power tool can result in death or serious bodily injury!

This manual contains important information about product safety. Please read and understand this manual before operating the power tool. Please keep this manual available for others before they use the power tool.

# MODE D'EMPLOI ET INSTRUCTIONS DE SECURITE

# **AVERTISSEMENT**

Une utilisation incorrecte et dangereuse de cet outil motorisé peut entraîner la mort ou de sérieuses blessures corporelles!

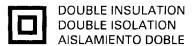
Ce mode d'emploi contient d'importantes informations à propos de la sécurité de ce produit. Prière de lire et de comprendre ce mode d'emploi avant d'utiliser l'outil motorisé. Garder ce mode d'emploi à la disponibilité des autres utilisateurs avant qu'ils utilisent l'outil motorisé.

# MANUAL DE INSTRUCCIONES E INSTRUCCIONES DE SEGURIDAD

# **ADVERTENCIA**

¡La utilización inapropiada e insegura de esta herramienta eléctrica puede resultar en lesiones serias o en la muerte!

Este manual contiene información importante sobre la seguridad del producto. Lea y comprenda este manual antes de utilizar la herramienta eléctrica. Guarde este manual para que puedan leerlo otras personas antes de que utilicen la herramienta eléctrica.



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# IMPORTANT INFORMATION

Read and understand all of the operating instructions, safety precautions and warnings in the Instruction Manual before operating or maintaining this power tool.

Most accidents that result from power tool operation and maintenance are caused by the failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing a potentially hazardous situation before it occurs, and by observing appropriate safety procedures.

Basic safety precautions are outlined in the "SAFETY" section of this Instruction Manual and in the sections which contain the operation and maintenance instructions.

Hazards that must be avoided to prevent bodily injury or machine damage are identified by WARNINGS on the power tool and in this Instruction Manual.

Never use this power tool in a manner that has not been specifically recommended by HITACHI, unless you first confirm that the planned use will be safe for you and others.

## **MEANINGS OF SIGNAL WORDS**

WARNING indicates a potentially hazardous situations which, if ignored, could result in serious personal injury.

**CAUTION** indicates a hazardous situations which, if ignored, could result in moderate personal injury, or could cause machine damage.

NOTE emphasizes essential information.

# SAFETY

# INPORTANT SAFETY INSTRUCTIONS FOR USING ALL POWER TOOLS

⚠ WARNING: Death or serious bodily injury could result from improper or unsafe use of power tools. To avoid these risks, follow these basic safety instructions:

#### **READ ALL INSTRUCTIONS**

#### 1. NEVER TOUCH MOVING PARTS.

Never place your hands, fingers or other body parts near the tool's moving parts.

#### 2. NEVER OPERATE WITHOUT ALL GUARDS IN PLACE.

Never operate this tool without all guards or safety features in place and in proper working order. If maintenance or servicing requires the removal of a guard or safety feature, be sure to replace the guard or safety feature before resuming operation of the tool.

#### 3. ALWAYS WEAR EYE AND EAR PROTECTOR.

Protect yourself from flying or expelled wood chips, metal particles or other debris by using protective goggles or equivalent eye protector. Wear ear protector to protect yourself from excessive noise.

#### 4. PROTECT YOURSELF AGAINST ELECTRIC SHOCK.

Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigeration enclosures. Never operate the tool in damp or wet locations.

#### 5. DISCONNECT TOOLS.

Never leave the tool connected to a power source. Always disconnect the tool from its power source before servicing, inspecting, maintaining, cleaning and before changing or checking any parts.

#### 6. AVOID UNINTENTIONAL STARTING.

Don't carry the tool while it is connected to its power source. Don't carry the tool with your finger near the power switch. Be sure the power switch is in the "off" position before connecting the tool to its power source.

#### 7. STORE TOOL PROPERLY.

When not in use, the tool should be stored in a dry place. Keep out of reach of children. Lock-out the storage area.

#### 8. KEEP WORK AREA CLEAN.

Cluttered areas and benches invite injuries. Clear all work areas and work benches of unnecessary tools, debris, furniture, etc.

#### 9. CONSIDER WORK AREA ENVIRONMENT.

Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit and well ventilated.

Don't use tool in presence of flammable liquids or gases.

Power tools produce sparks during operation. They also spark when switching ON/ OFF. Never use power tools in sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.

#### 10. KEEP CHILDREN AWAY.

Do not let visitors contact tool or extension cord.

All visitors should be kept safely away from work area.

#### 11. DON'T FORCE TOOL.

It will do the job better and safer at the rate for which it was intended.

## 12. USE RIGHT TOOL.

Don't force small tool or attachment to do the job of a heavy-duty tool.

Don't use tool for purpose not intended — for example — don't use circular saw for cutting tree limbs or logs.

#### 13. DRESS PROPERLY.

Do not wear loose clothing or jewelry. They can be caught in moving parts.

Rubber gloves and non-skid footwear are recommended when working outdoors.

Wear protective hair covering to contain long hair.

#### 14. USE FACE, DUST MASK OR RESPIRATOR IF OPERATION IS DUSTY.

All persons in the area where power tools are being operated should also wear face, dust mask or respirator.

#### 15. DON'T ABUSE CORD.

Never carry tool by cord or yank it to disconnect from receptacle.

Keep cord from heat, oil and sharp edges.

#### 16. SECURE WORK.

Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.

#### 17. DON'T OVERREACH.

Keep proper footing and balance at all times.

#### 18. MAINTAIN TOOLS WITH CARE.

Keep tools sharp and clean for better and safer performance.

Follow instructions for lubricating and changing accessories.

Inspect tool cords periodically and if damaged, have repaired by an authorized service center. Inspect extension cords periodically and replace if damaged.

Keep handles dry, clean, and free from oil and grease.

#### 19. REMOVE ADJUSTING KEYS AND WRENCHES.

Keys and adjusting wrenches remove from tool before turning it on.

#### 20. OUTDOOR USE EXTENSION CORD.

When tool is used outdoors, use only extension cord intended for use outdoors and so marked.

#### 21. STAY ALERT.

Watch what you are doing. Use common sense. Do not operate tool when you are tired. Tools should never be used by you if you are under the influence of alcohol, drugs or medication that makes you drowsy.

#### 22. CHECK DAMAGED PARTS.

Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation.

A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this Instruction Manual.

Have defective switches replaced by the authorized service center.

Do not use tool if switch does not turn it on and off.

#### 23. NEVER USE A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.

Never use a power tool for applications other than those specified in the Instruction Manual.

#### 24. HANDLE TOOL CORRECTLY.

Operate the tool according to the instructions provided herein. Do not drop or throw the tool. Never allow the tool to be operated by children, individuals unfamiliar with its operation or unauthorized personnel.

#### 25. CHECK FOR LIVE WIRES.

Avoid the risk of severe electrical shock by checking for live electrical wires that may be buried in walls, floors or ceilings. The wires should be de-energized before work begins.

#### 26. KEEP ALL SCREWS, BOLTS AND COVERS TIGHTLY IN PLACE.

Keep all screws, bolts, and plates tightly mounted. Check their condition periodically.

#### 27. DO NOT USE POWER TOOLS IF THE PLASTIC HOUSING OR HANDLE IS CRACKED.

Cracks in the tool's housing or handle can lead to electric shock. Such tools should not be useàÇuntil repaired.

#### 28. BLADES AND ACCESSORIES MUST BE SECURELY MOUNTED TO THE TOOL.

Prevent potential injuries to youself or others. Blades, cutting implements and accessories which have been mounted to the tool should be secure and tight.

#### 29. KEEP MOTOR AIR VENT CLEAN.

The tool's motor air vent must be kept clean so that air can freely flow at all times. Check for dust build-up frequently.

#### 30. OPERATE POWER TOOLS AT THE RATED VOLTAGE.

Operate the power tool at voltages specified on its nameplate.

If using the power tool at a higher voltage than the rated voltage, it will result in abnormally fast motor revolution and may damage the unit and the motor may burn out.

#### 31. NEVER USE A TOOL WHICH IS DEFECTIVE OR OPERATING ABNORMALLY.

If the tool appears to be operating unusually, making strange noises, or otherwise appears defective, stop using it immediately and arrange for repairs by a Hitachi authorized service center.

#### 32. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.

Don't leave tool until it comes to a complete stop.

#### 33. CAREFULLY HANDLE POWER TOOLS.

Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.

#### 34. DO NOT WIPE PLASTIC PARTS WITH SOLVENT.

Solvents such as gasoline, thinner benzine, carbon tetrachloride, and alcohol may damage and crack plastic parts. Do not wipe them with such solvents.

Wipe plastic parts with a soft cloth lightly dampened with soapy water and dry thoroughly.

#### 35. USE ONLY GENUINE HITACHI REPLACEMENT PARTS.

Replacement parts not manufactured by Hitachi may void your warranty and can lead to malfunction and resulting injuries. Genuine Hitachi parts are available from your dealer.

36. Use only depressed center wheels having a maximum operating speed at least high as 13700 RPM for G10SR and 13300 RPM for G12SR.

# IMPORTANT SAFETY INSTRUCTIONS FOR USE OF THE DISC GRINDER

MARNING: Death or serious bodily injury could result from improper or unsafe use of the disc grinder. To avoid these risks, follow these basic safety instructions:

- 1. **NEVER** operate the disc grinder without its wheel guard in place.
- 2. **NEVER** place hands or body parts near the disc during operation.
- 3. **NEVER** use a depressed center wheel which is cracked or deformed or worn away.
- NEVER use a depressed center wheel with an RPM rating which is less than 13700 RPM for G10SR and 13300 RPM for G12SR. The wheel can disintegrate during use and cause severe injuries.
- 5. **NEVER** use the grinder in places where the sparks generated by the grinder can cause explosion, such as where flammable materials or gases are present.
- 6. **NEVER** push in the lock pin while the spindle is running.
- ALWAYS wear eye protection that meets the requirement of the latest revision of ANSI Standard Z87.1.
- 8. **ALWAYS** wear a mank or respirator to protect yourself from dust or potentially harmful particles generated during the grinding operation.
- 9. ALWAYS firmly grip the body handle and side handle while operating the grinder.
- 10. ALWAYS have a trial run before grinding commence.
- 11. **ALWAYS** follow the instructions contained in this manual when replacing the depressed center wheel.

# REPLACEMENT PARTS

When servicing use only identical replacement parts.

Repairs should be conducted only by a Hitachi authorized service center.

## **POLARIZED PLUGS**

To reduce the risk of electrick shock, this equipment has a polarized plug (one blade is wider than the other).

This plug will fit in a polarized outlet only one way.

If the plug does not fit fully in the outlet, reverse the plug.

If it still does not fit, contact a qualified electrician to install the proper outlet.

Do not change the plug in any way.

# **USE OF EXTENSION CORD**

Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

#### MINIMUM GAGE FOR CORD SETS

		ר	otal Length of C	ord in Feet (Mete	er)
		0 – 25	26 – 50	51 – 100	101 – 150
		(0 - 7.6)	(7.9 – 15.2)	(15.5 - 30.5)	(30.8 - 45.7)
Ampere	Rating		A'	WG	
More	Not More				
Than	Than				
0 -	- 6	18	16	16	14
6 -	<b>- 10</b>	18	16	14	12
10 -	- 12	16	16	14	12
12 -	- 16	14	12	Not Reco	mmended

MARNING: Avoid electrical shock hazard. Never use this tool with a damaged or frayed electrical cord or extension cord.

> Inspect all electrical cords regularly. Never use in or near water or in any environment where electric shock is possible.

## DOUBLE INSULATION FOR SAFER OPERATION

To ensure safer operation of this power tool, HITACHI has adopted a double insulation design. "Double insulation " means that two physically separated insulation systems have been used to insulate the electrically conductive materials connected to the power supply from the outer frame handled by the operator. Therefore, either the symbol " or the words and "Double insulation" appear on the power tool or on the nameplate.

Although this system has no external grounding, you must still follow the normal electrical safety precautions given in this Instruction Manual, including not using the power tool in wet environments.

To keep the double insulation system effective, follow these precautions:

- Only HITACHI AUTHORIZED SERVICE CENTER should disassemble or assemble this power tool, and only genuine HITACHI replacement parts should be installed.
- O Clean the exterior of the power tool only with a soft cloth moistened with soapy water, and dry thoroughly.
  - Never use solvents, gasoline or thinners on plastic components; otherwise the plastic may dissolve.

# SAVE THESE INSTRUCTIONS AND MAKE THEM AVAILABLE TO OTHER USERS OF THIS TOOL!

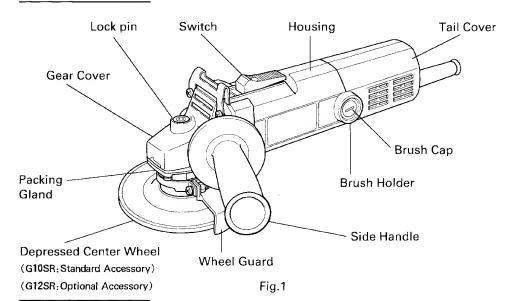
# **FUNCTIONAL DESCRIPTION**

#### NOTE:

The information contained in this Instruction Manual is designed to assist you in the safe operation and maintenance of the power tool.

Some illustrations in this Instruction Manual may show details or attachments that differ from those on your own power tool

# **NAME OF PARTS**



# **SPECIFICATIONS**

Model	G10SR	G12SR				
Motor	Single-Phase Series	Commutator Motor				
Power Source	Single-Phase	Single-Phase 115V AC 60Hz				
Current	5A					
No-Load Speed	11000/min					
Wheel Size: external diam. hole diam.	4"(100 mm) 5/8"(16 mm)	4-1/2"(115 mm) 7/8"(22 mm)				
Weight	5.1 lbs (2.4 kg)	5.3 lbs (2.5 kg)				
Spindle Thread	M10 × 1.25	U5/8"-11				

# **ASSEMBLY AND OPERATION**

## **APPLICATIONS**

$\bigcirc$	Removal	of casting	fin	and	finishing	of	various	type	of	steel,	bronze	and	aluminum
	materials	and castin	as.										

- O Grinding of welded sections or sections cut by means of an acetylene torch.
- O Grinding of synthetic resins, slate, brick, marble.

## PRIOR TO OPERATION

#### 1. Power source

Ensure that the power source to be utilized conforms to the power source requirements specified on the product nameplate.

#### 2. Power switch

Ensure that the switch is in the OFF position. If the plug is connected to a receptacle while the switch is in the ON position, the power tool will start operating immediately and can cause serious injury.

#### 3. Extension cord

When the work area is far away from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.

#### 4. Check the receptacle

If the receptacle only loosely accepts the plug, the receptacle must be repaired. Contact a licensed electrician to make appropriate repairs.

If such a fautly receptacle is used, it may cause overheating, resulting in a serious hazard.

## 5. Check your working environment

Ensure the following before operation;

- O No flammable gas, liquid, or object at worksite.
- O Grinding thin steel sheet may cause a high booming sound.

In this case, place a rubber mat under the workpiece.

- Take appropriate noise preventive measures to prevent adverse affects on the environment by electrical noise.
- Clear the area of children or unauthorized personnel.

## 6. Mounting the wheel guard

Be sure to mount the wheel guard at an angle that will protect the operator's body from injury by a broken wheel piece.

⚠ WARNING: If not correctly attaching a proper wheel guard, it may lead to severe injury or death if the depressed center wheel should be broken.

- 7. Inspect the depressed center wheel carefully before mounting.
  - Thoroughly check that a specified depressed center wheel free of cracks and splits is mounted. Make sure that the depressed center wheel is firmly clamped and has been mounted in accordance with the instructions contained on page 13.
- 8. Test the grinder before using.

Before actually beginning the grinding work, test the grinder by first clearing the area of all other personnel. Make sure the wheel guard is in place and that you are wearing eye protection. Turn the grinder "on", and make sure the grinder runs smoothly and shows on abnormalities.

Duration of the trial run is as follows:

9. Use only properly rated depressed center wheels.

Use only depressed center wheels rated at 13700 RPM or more for G10SR and 13300 RPM or more for G12SR.

Using a depressed center wheel rated less can lead to wheel disintegration during operation and serious bodily injury.

10. Check the lock pin.

Make sure that the lock pin is disengaged by pushing lock pin two or three times before turning on the grinder.

# **GRINDER OPERATION**

- 1. Hold the grinder firmly by its housing and side handle (Fig. 1).

  The grinder produces a counterforce which must be controlled by firmly holding onto the grinder.
- 2. Turn the grinder "on".

While holding the grinder firmly, use one finger to slide the switch to the "on" position.

3. Use light grinding pressure.

There is no need to press hard when grinding. Usually the grinder's own weight is sufficient to allow the required light contact with the surface to be ground.

MARNING: Do not press the grinder forcibly against the surface to be ground. Heavy pressure can result in wheel breekage and serious injury. It can also damage the surface being ground or damage the grinder's motor.

4. Use proper grinding angle.

Grind only with the wheel's edge by lifting the grinder 15° to 30°, as shown in Fig. 2.

⚠ CAUTION: Do not use the entire surface of the depressed center wheel. Use only the edge of the depressed center wheel.

# Move the grinder in the proper direction.

When using a new depressed center wheel in direction A (Fig. 2), the wheel edge may cut into the workpiece. In this case, grind in direction B (Fig. 2).

Once the wheel edge is worn, the workpiece can be ground in both directions.

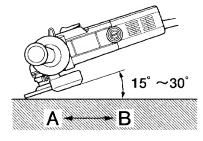


Fig. 2

**NOTE:** The wheel provided (resinoid wheel) is rated as Class A grain and # 36 grain size. It is most suitable for heavy grinding of steel and other types of materials.

# 6. Adjust operation to desired finish. For a fine finish, decrease pressure by lifting slightly. Grind slowly and at the appropriate speed

CAUTION: The revolving depressed center wheel will creste air turbulence.

Do no lay the grinder down in areas of dust or dirt until it has come to a complete stop.

# DEPRESSED CENTER WHEEL ASSEMBLY AND DISASSEMBLY

WARNING: Never attempt to assemble or disassemble the depressed center wheel while the grinder is capable of being turned "on".

Be sure power switch is in the "OFF" position and the electrical cord has been disconnected from the receptacle.

# 1. Assembling

- (1) Turn the disc grinder upsidedown so that the spindle is facing upward.
- (2) Align the oval-shaped indentation of the wheel washer with the notched part of the spindle, then attach them.
- (3) Fit the protuberance of the depressed center wheel onto the wheel washer.
- (4) Screw the wheel nut onto the spindle.
- (5) While pushing the lock pin with one hand, lock the spindle by turning the depressed center wheel slowly with the other hand. Tighten the wheel nut by using the supplied wrench as shown in Fig. 3.

A CAUTION: Tighten the wheel nut securely and confirm that the depressed center wheel is not wobble.

# 2. Disassembling

To remove the depressed center wheel, follow the above-mentioned procedure in reverse order.

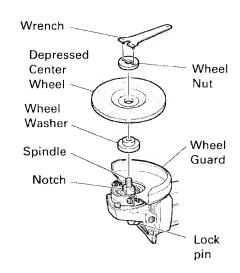


Fig. 3

# MAINTENANCE AND INSPECTION

MARNING: Be sure to switch power OFF and disconnect the plug from the receptacle during maintenance and inspection.

1. Replacing the depressed center wheel

Replace the depressed center wheel when it has been worn out to about 2-3/8" (60mm) in external diameter. Confirm that there is no crack or any damage to the depressed center wheel. If there is a crack or a transformation in the wheel, replace it immediately.

2. Inspecting the mounting screws

Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loosened, retighten them immediately.

⚠ WARNING: Using this grinder with loosen screws is extremely dangerous.

 Confirm that there is no damage in the wheel guard, the cord and the housing, etc.
 Furthermore, confirm that there is no abnormality in the activation of the switch.

4. Inspecting the carbon brushes (Fig. 4)
The motor employs carbon brushes which are consumable parts. Replace the carbon brush with a new one when it becomes worn to its wear limit. Always keep carbon brushes clean and ensure that they slide freely within the brush holders.

No. of carbon
Wear limit brush

21
0.24" (6mm)
0.67" (17mm)

⚠ CAUTION: Using this grinder with a carbon brush which is worn in excess of the wear limit will damage the motor.

Fig. 4

NOTE: Use HITACHI carbon brush No. 21 indicated in Fig. 4.

Replacing carbon brushes:

Remove the brush caps (Fig. 1) with a slotted screwdriver. The carbon brushes can then be easily removed.

Service and repairs

All quality power tools will eventually require servicing or replacement of parts because of wear from normal use. To assure that only authorized replacement parts will be used, all service and repairs must be performed by a HITACHI AUTHORIZED SERVICE CENTER, ONLY.

# **ACCESSORIES**

⚠ WARNING: Never use any accessories other than those mentioned below.

The use of any other attachment or accessory such as cup wheel or cut-off wheel, etc. can be dangerous and could cause personal injury or property damage.

#### NOTE:

Wrench

Accessories are subject to change without any obligation on the part of the HITACHI.

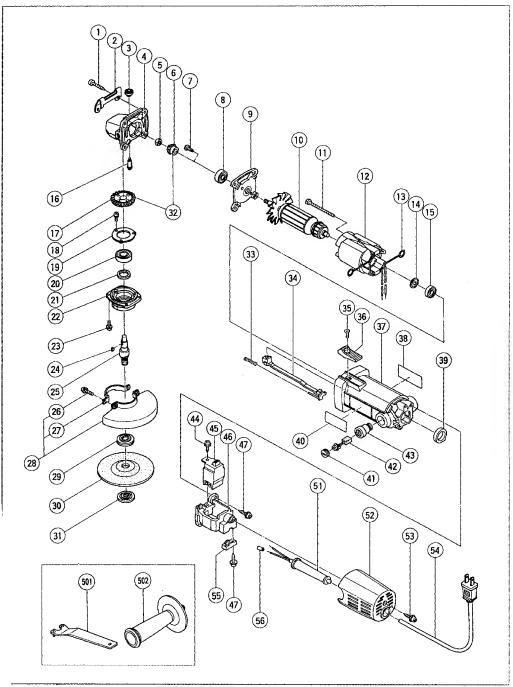
## STANDARD ACCESSORIES

	***************************************
	(Code No. 936522 G10SR)
	(Code No. 938332Z G12SR)
(_)	Side Handle (Code No. 318312)1
3	Depressed center wheel (G10SR only)1
	4" (100mm) external dia. $\times$ 1/4" (6mm) thickness $\times$ 5/8" (16mm) hole dia.
	(Code No. 701040)

# OPTIONAL ACCESSORIES . . . sold separately

#### NOTE:

Specifications are subject to change without any obligation on the part of the HITACHI.



## 310SR

item No.	Part Name
1	Tapping Screw $D5 \times 25$
2	Guard Plate
3	Pushing Button
4	Gear Cover Ass'y
5	Special Nut M7
6	Pinion
7	Slotted Hd. Screw (Seal Lock) M4 × 10
8	Ball Bearing (608VVMC2EPS2L)
9	Inner Cover
10	Armature Ass'y
11	Hex. Hd. Tapping Screw D4 × 70
12	Stator Ass'y
13	Brush Terminal
14	Washer (A)
15	Ball Bearing (626VVMC2ERPS2S)
16	Lock Pin
17	Gear
18	Seal Lock Screw (W/Sp. Washer) M4 × 10
19	Bearing Cover (B)
20	Ball Bearing (6001VVCMPS2L)
21	Felt Packing
22	Packing Gland
23	Seal Lock Screw (W/Sp. Washer) M4 × 12
24	Woodruff Key $2.5 \times 8$
25	Spindle
26	Machine Screw (W/Sp. Washer) M5 × 16
27	Set Plate
28	Wheel Guard Ass'y
29	Wheel Washer
30	D.C. Wheels 115mm A36Q

item No.	Part Name
31	Wheel Nut M10 × P1.25
32	Gear Pinion Ass'y
33	Spring
34	Slide Bar
35	Flat Hd. Screw M4 × 10
36	Slide Knob (C)
37	Housing Ass'y
38	Nameplate
39	Bearing Bushing
40	HITACHI Label
41	Brush Cap
42	Carbon Brush
43	Brush Holder
44	Tapping Screw (W/Flange) $D4 \times 12$
45	Slide Switch
46	Switch Holder
47	Tapping Screw (W/Flange) $D4 \times 16$
51	Cord Armor
52	Tail Cover
53	Tapping Screw (W/Flange) $D4 \times 16$
54	Cord
55	Cord Clip
56	Tube (D)
501	Wrench
502	Side Handle

Parts are subject to change without any obligation on the part of the HITACHI due to improvements. This exploded assembly drawing and parts list are for G10SR. It uses parts that differ from those of G12SR, so use the exploded assembly drawing and parts list as a reference.